



The OAS Newsletter

A supplement to *The Ohio Journal of Science* (December 1993) for the members of The Ohio Academy of Science.

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Ohio Senior Academy of Science Council Appointed

The Ohio Academy of Science recently appointed 90 Ohio business persons, academic and governmental researchers, and teachers to The Ohio Senior Academy of Science Council. The council is a new statewide leadership, planning, and service group designed to develop and promote scientific and scholarly activities in Ohio with regard to science, engineering, technology, and education.

The Director of The Senior Academy Council is Dr. Isadore Newman, Professor of Education at the University of Akron. He will be assisted by Ms. Christine Martin, Manager of Color Technology at the Geon Co., a subsidiary of The BFGoodrich Company in Avon Lake, OH.

The primary work of the Council will be carried out by leadership teams headed by division coordinators who are broadly representative of science, engineering, technology, and education in Ohio.

Among several priorities, The Ohio Senior Academy of Science Council will facilitate research and education, provide advice to local, state, and federal governments, widen public understanding and appreciation of science, and promote innovation and adoption of new technologies.

The Ohio Academy of Science is an umbrella organization uniting everyone in Ohio who values science. The mission of the Academy is to *empower curiosity, discovery, and innovation for the 21st century.*

About the Director of The Ohio Senior Academy of Science Council

Dr. Isadore Newman, a member of The Ohio Academy of Science since 1973 and a Fellow (1976), has been a Professor at the University of Akron College of Education for 21 years. He also currently holds the titles of Coordinator of the Office of Educational Research, Associate Director of the Institute of Life Span Development & Gerontology at the University of Akron, and Adjunct Professor in the Department of Psychiatry, Division of Psychology, at Northeastern Ohio Universities College of Medicine in Rootstown.

Dr. Newman holds a B.A. from the University of Miami; an M.A. from the New School for Social Research (New York); and a Ph.D. from Southern Illinois University at Carbondale.

During his professional career, Dr. Newman has served on over 300 dissertation committees and has presented hundreds of papers at state, national, and international meetings. He has co-authored many articles, written nine books and monographs, and has served on many editorial boards, as well as being the editor of *Multiple Linear Regression Viewpoints* and *Midwestern Educational Researcher*.

He has been the President of the Akron Chapter of Phi Delta Kappa, Vice-President of The Ohio Academy of Science-Psychology, and President of the Midwestern Educational Research Association.

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Archaeologists Uncover Defensive Trench at Troy and Statue of Roman Emperor Hadrian

Evidence uncovered this summer in western Turkey shows that the ancient city of Troy was indeed a great city, one of the era's largest known Aegean settlements.

The evidence was unearthed during an excavation this summer at Troy that was conducted by the University of Tübingen (Germany) and the University of Cincinnati. The joint effort has proved to be a productive campaign since the two universities joined forces in 1988 to reopen excavations at the site.

When Heinrich Schliemann uncovered ruins at Troy in the 1870s, there was suspicion that the site was much too small for a city of Troy's reputation. Schliemann's ruins turned out to be a precursor to the legendary city, not the Troy that Homer made famous in his epic tales of the Trojan War. Archaeologists now know that several cities were built in layers over the millennia at Troy and refer to the layer thought to be the Homeric city (or Priam's kingdom) as Troy VI.

Excavation this summer revealed a military ditch of the Troy VI period, measuring more than three meters wide and located about 400 meters south of the citadel. According to Manfred Korfmann, University of Tübingen archaeologist and head of the over all Troy excavation project, and C. Brian Rose, University of Cincinnati archaeologist and director of UC's Troy excavation team, the carefully constructed, rockcut trench must have served as the first line of defense and protection along the southern edge of the lower portion of the city. A stone wall may have stood along the trench's north side, but its stones were removed and reused, they said.

Before excavations this summer, the archaeologists thought they might find a massive wall at the outer edge of the city, based on magnetometer readings conducted in 1992 that allowed them to "see" underground before digging. What they found instead was the military trench.

"This is still a major find," said Rose.

"The importance of the ditch is that it clearly defines the extent of the settlement in the prehistoric period. This makes Troy, in the late prehistoric period, one of the larger known settlements in the Aegean area," he said.

Another exciting discovery this summer was an over-lifesized marble statue of Roman emperor Hadrian, uncovered in an area where Rose is investigating the Roman history of Troy (or Ilion, as the Romans called the city). The statue, found behind a stage in a Roman theater and bearing a perfectly preserved head, served as the central focus of the stage and was probably built by or dedicated to the emperor. Hadrian, who ruled the Roman empire from about 117-138 A.D., is known to have visited Ilion in 124 A.D., and is renowned for his brilliance, good looks, wit, and cultivation of the arts and architecture.

According to Rose, the statue, missing only its legs, may become a central piece for the Troy museum based in the nearby town of Canakkale, where it has already been delivered.

Visitors to Troy this summer included a group from Troy, OH, who toured the site and watched a multimedia dramatization of the Troy legend presented by an Istanbul theater company in conjunction with La Mama Experimental Theater in New York. Troy, OH, Mayor Pete Jenkins presented a key to the city and a proclamation establishing a Sister City relationship with Troy "in spirit" because there are no longer permanent inhabitants at the site. Earlier this year, Rose and Korfmann visited the Ohio Trojans for a day.

UC and the Germans have a long archaeological tradition at Troy. UC's Carl Blegen, who excavated the site in the 1930s, was known as a world authority on Troy and his discoveries resulted in a new chronology, still in use today, for the nine cities of Troy. The university this summer appointed Jack L. Davis as the first holder of its chair named after Blegen.

Ohio Space Scientists of Tomorrow Visit Florida

Fifty-five outstanding Ohio science and math high school students were selected by the Ohio Academy of Science as Ohio's Space Scientists of Tomorrow.

They were selected for their performance in science and mathematics and for their communication skills. The program is designed to reward outstanding 9th, 10th, and 11th graders for their school work and for participation and leadership in extracurricular youth science activities, and to encourage them to consider careers in science and engineering. The Academy based its selections on standardized test scores, class rank, grade point average, participation and leadership in student, science, and mathematics related activities, and writing ability.

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The Insects 1994 Calendar

The Entomological Society of America presents its 1994 insect calendar: *Insects 1994*. This beautiful calendar features an array of unusual and colorful insect photographs which are finely reproduced in full color on high-quality, glossy paper. To order, contact the Entomological Society of America, 9301 Annapolis Road, Lanham, MD 20706 (301-731-4535).

The OAS Newsletter

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The OAS Newsletter appears as a supplement to *The Ohio Journal of Science* biannually (June and December).

Renowned Adventurers, Scientists, and Environmentalists Headline 1993-1994 Explorer Series at the Cleveland Museum of Natural History

The 1993-1994 Explorer Series at the Cleveland Museum of Natural History will feature distinguished experts in various fields of the natural sciences. All presentations are on Fridays at 8 p.m. and will be held once per month through May 1994. The remaining series presentations include: Jan. 21—Rudy Mancke, co-host of the PBS series "NatureScene," presents "NatureScene: A Naturalist's View of the World"; Feb. 18—Dr. Konrad Spindler, head of the Innsbruck Institute for Prehistory, "The Man on Ice," which describes the findings of his scientific examination of the 5,300 year old mummy discovered in the Similium Glacier in the Alps; Mar. 18—Reg Morrison, photographer, will present in word and pictures "Australia: Journey of the Great Southern Ark"; Apr. 8—David Hunt, curator of western art at Joslyn Art

Museum in Omaha, NE, "Chance Encounters: An Artist on the American Frontier"; May 13—Lawrence Krauss, Associate Professor at Yale University, "Desperately Seeking Dark Matter," which describes current experiments to detect the vast cosmic sea of mysterious material surrounding the galaxies.

For over 60 years, renowned scientists, adventurers, and environmentalists have shared their latest discoveries in this lecture series sponsored by the Museum's Women's Committee. Tickets are available (while they last) for each monthly presentation. Individual ticket prices are: \$8 for adults and \$7 for seniors, students, and children. Museum members' prices are: \$6 adults; \$5 seniors, students, and children. For further information or tickets call the Cleveland Museum of Natural History, (216) 231-4600.

Federal Technology Reinvestment Project Implemented

President Clinton's Technology Reinvestment Project (TRP), a cornerstone of his defense reinvestment and conversion initiative, has drawn a powerful show of interest from American industry. Over 2,800 proposals, requesting \$9.0 billion, were submitted in response to the offer of \$472 million in matching federal grants from the TRP. Winners of the competition were announced beginning late September. The TRP includes funds for development of dual-use technologies that meet both defense and civilian needs, and for technology assistance to small firms, including defense firms making the transition to commercial manufacturing.

The TRP solicited proposals in three key areas: technology development to create new technologies with the potential for commercialization within five years; technology deployment to disseminate existing technology for near-term commercial and defense products; and manufacturing education and training to strengthen engineering and work force capabilities necessary for a competitive industrial base.

The Departments of Defense, Commerce, Energy and Transportation, the National Aeronautics and Space Administration, and the National Science Foundation collaborated to implement the TRP. Technical evaluation teams from the six agencies evaluated the merits of each proposal.

The response to President Clinton's invitation came from companies, universities, and state and local governments. Proposals were received from organizations located in all 50 states and the District of Columbia. The TRP requires successful applicants to match federal funds with their own money.

Massillon Firm to Use University of Akron's Technology for Tire Recycling

License and sponsored research agreements valued at more than \$250,000 were reached in Akron, OH, on 30 August 1993 between The University of Akron and National Feedscrew & Machining Industries (NFM) of Massillon, OH, for the use of patented technology to recycle tires.

The agreement also grants NFM a limited exclusive right to manufacture and sell the equipment involved in the innovative process developed by Dr. Avraam I. Isayev, UA professor of polymer engineering. The technology employs ultrasonics or high-pitched sound waves, pressure, and heat to break down the chemical bonds found in rubber and cross-linked plastics.

Isayev's technology for recycling rubber is different from others that involve either grinding up the rubber or dissolving it using strong chemical sol-

vents. Isayev's process may enable the material to be revulcanized making recycling possible with his patented technology. The method is not only applicable to tires, but to other vulcanized rubber compounds and elastomer products as well.

Researchers who have reviewed the process believe the ultrasonic method could help rid the nation's landscape of the estimated 2.5 billion tires lying in dumps and creating potential fire hazards, along with tons of assorted hoses, gaskets, seals, and other rubber-related products. This technology also could help states, counties, and municipalities comply with federal legislation.

Further details on the technology and licensing opportunities may be obtained by contacting Dennis J. Dannemiller at Temarex (216-253-7020), the firm assisting UA in technology licensing.



Recycle!

Roger C. Bone, M.D., Assumes Presidency of Medical College of Ohio

Roger C. Bone, M.D., 52, former dean of Rush Medical College and vice president of medical affairs for Rush-Presbyterian-St. Luke's Medical Center in Chicago, assumed the presidency of the Medical College of Ohio in Toledo on 1 September 1993. Dr. Bone succeeds Richard D. Ruppert, M.D., who held the post since September 1977.

A 1967 graduate of the University of Arkansas Medical School, Dr. Bone completed residency and fellowship training in pulmonary medicine at the University of Texas Southwestern Medical College in Dallas between 1971 and 1974. His undergraduate work was done at Hendrix College in Conway, AR.

Dr. Bone joined the Rush Medical College faculty in 1984 as professor and chairman of the Department of Medicine. He was named dean and vice president of medical affairs in 1992. He held two endowed chairs, and was chief of the medical center's pulmonary and critical care division.

Dr. Bone was named a Master Teacher in 1993 by the American College of Chest Physicians. He currently serves as host of "Internal Medicine Update," a weekly

program for physicians that is televised nationally on the Lifetime Cable Network.

His research in the field of pulmonary medicine and critical care has been supported by funding from the National Institutes of Health, the United States Environmental Protection Agency, and private industry. He has published extensively in scientific journals, and has edited more than 30 books.

Dr. Bone, who said he will continue a pulmonary medicine practice at Medical College of Ohio, said he was honored to follow Dr. Ruppert as president of MCO. "The Medical College of Ohio is an outstanding academic health science center with a remarkable campus, quality people, and enormous potential for growth and development," he said.

MCO to Host OAS Annual Meeting

The Medical College of Ohio at Toledo will be the host institution for the 103rd Annual Meeting of The Ohio Academy of Science. The meeting will be held 22-24 April 1994.

Plant Sciences Meeting Set

A special meeting for those individuals interested in the plant sciences will be held at 1:00 p.m., Saturday, 23 April 1994, during the Annual Meeting of The Ohio Academy of Science at The Medical College of Ohio, Toledo. All Academy members affiliated with the former Plant Sciences Section and new Academy members with an interest in the plant sciences are invited to attend. A discussion will be held on how plant scientists may be accommodated within the new organizational structure of the Academy. For more information contact Dr. John Furlow at The Ohio State University Herbarium at (614) 292-3296.

Space Scientists of Tomorrow. . .

Continued from page B

Twenty-eight female and 27 male students were selected from 371 nominees submitted by 252 schools. Accompanying the students were six outstanding Ohio science and mathematics teachers.

The students left Port Columbus International Airport on 3 August, for the four day all-expense-paid educational trip to Kennedy Space Center, EPCOT, the McNair science magnet school, and Sebastian Beach Inlet Park in Florida. The program was sponsored by the Ohio Department of Development, TRW Inc., BFGoodrich Aerospace, NASA Lewis Research Center, and The Ohio Academy of Science.

AAAS Annual Meeting and New Directory Announced

The American Association for the Advancement of Science (AAAS) will hold its 1994 annual meeting February 18-23 at the San Francisco Hilton and Towers. The meeting is expected to be attended by over 5,000 scientists, researchers, and educators from a variety of scientific disciplines. Over 100 companies will also be displaying the latest scientific products, publications, and services. The scientific program will include over 100 symposia organized into 13 thematic tracks as well as several multi-day seminars. The meeting will foster collaborations amongst scientists in diverse fields and greater understanding of important advances in all of science.

Representing The Ohio Academy of Science at the AAAS meeting will be

Dr. Victor Mayer of The Ohio State University. Also attending the meeting will be Mr. Lynn E. Elfner, CEO of The Ohio Academy of Science, who serves on the Board of Directors of the National Association of Academies of Science which meets simultaneously with AAAS.

For more information about the Annual Meeting, contact the AAAS Meetings Office. Phone: (202) 326-6450, fax: (202) 289-4021.

New Directory

The AAAS Office of Communications has announced that the AAAS "Green Book" Science Sources 1993 directory is now available. This directory, compiled annually, contains the names,

addresses, and phone numbers of hundreds of scientific, medical, environmental, and engineering experts and their public information contacts. It can be ordered for \$15.00 (\$12.00 for AAAS members) through AAAS Books, Dept. A59, P.O. Box 753, Waldorf, MD 20604. Phone: (301) 645-5643, fax: (301) 843-0159.

OJS Editor, Dr. Lee Meserve, Named to Special Professorship at BGSU

Dr. Lee Meserve, a professor of biological sciences at Bowling Green State University, who has earned a reputation among his students for making biology interesting and understandable, was appointed Distinguished Teaching Professor (Oct. 1) by the Bowling Green State University Board of Trustees. Dr. Meserve is Editor of *The Ohio Journal of Science*, the official publication of The Ohio Academy of Science. He has also been selected to give the address at the BGSU December commencement.

"Dr. Meserve has been an inspiration to many students," Dr. Eloise Clark, Vice President for Academic Affairs, said. "Students praise him for his skill in teaching in the classroom and they are just as enthusiastic concerning the dedication he demonstrates outside the classroom."

One student said, "Dr. Meserve was both a mentor and friend who treated his students as if they were part of his family. He was not only an instructor of classroom material but an instructor about life." Dr. Meserve spends additional time working with student science organizations and advising students enrolled in the pre-medicine, pre-dentistry, and pre-veterinary programs.

Dr. Meserve joined the BGSU faculty in 1973. He is a former recipient of the Hollis A. Moore Award for service to the University and he also received the Master Teacher Award in 1992. He

described his teaching goal as trying to explain subject matter to student audiences with varied backgrounds and have them learn, not merely memorize. "Additionally, a master teacher prepares students for the long term," Meserve said. "He imparts the knowledge of how to use education both in and out of the classroom."

An active participant in University governance, Dr. Meserve has served on a number of committees at the departmental, collegiate, and university levels. He also has published numerous book chapters, journal articles, and abstracts. Dr. Meserve is a member of the American Society of Zoologists, the American Association for the Advancement of Science, the American Institute of Biological Sciences, and the Gerontological Society of America, as well as The Ohio Academy of Science.

Meserve is the fifth recipient of the Distinguished Teaching Professor appointment, which is one of the three highest honors at the University. The award recognizes outstanding performance in the classroom and recipients are recommended by a committee of their peers. Other Distinguished Teaching Professors at BGSU are Dr. M. Neil Browne, economics; Dr. Chan K. Hahn, management; Virginia Marks, music; and Dr. V. Frederick Rickey, mathematics and statistics.

Nineteen Ohioans Named Fellow of The Ohio Academy of Science

Nineteen Ohio scientists, engineers, government officials, and teachers were named Fellow of The Ohio Academy of Science.

Fellows are members of the OAS who have been engaged in extensive, productive, scientific, technological, or educational contributions and have rendered some other special service to the Academy.

The Ohio Academy of Science—an umbrella organization uniting all in Ohio who value science—empowers curiosity, discovery, and innovation by stimulating interest in the sciences and technology, promoting and supporting research, improving science education, fostering interaction among fields of science, disseminating scientific knowledge, and recognizing and publicizing high achievement in attaining these objectives. The Academy's nearly 2,000 members are employed in industry, government, colleges and universities, and public and private schools in Ohio, many other states, and several foreign countries.

Newly elected Fellows of The Ohio Academy of Science are: **Prof. Terry Keiser**, Ohio Northern University, Ada; **Mr. Spencer E. Reames**, Benjamin Logan High School, Bellefontaine; **Dr. Jere M. Boyer**, Aultman Hospital, Canton; **Ms. Julie Weatherington Rice**, Bennett & Williams, Inc., Columbus; **Mr. Allison W. Cusick**, Ohio Dept. of Natural Resources, Columbus; **Ms. Anne M. Wickham**, Wickham & Associates, Columbus; **Mrs. Connie S. Hubbard**, Minerva High School, Dellroy; **Dr. Tom T. Hartley**, University of Akron, Mogadore; **Dr. Karl Schwenk**, Tuscarawas Valley High School, North Canton; **Mr. David E. Todt**, Shawnee State University, Portsmouth; **Ms. Elizabeth M. Obara**, Dublin City Schools, Powell; **Dr. Paul M. Holeski**, Rio Grande College, Rio Grande; **Dr. Augusta Askari**, Medical College of Ohio, Toledo; **Dr. Henry Moon**, University of Toledo, Toledo; **Dr. Jerome E. DeBruin**, University of Toledo, Toledo; **Mrs. Toni L. Miller**, Springfield Schools, Uniontown; **Dr. Nadine K. Hinton**, Heritage Middle School, Westerville; **Mr. Ralph E. Ramey**, Ohio Dept. of Natural Resources, Westerville; **Dr. Michael S. Herschler**, Otterbein College, Westerville.

Students Selected for Trip to AJAS Meeting in San Francisco in February

Eleven outstanding Ohio students will represent the Ohio Junior Academy of Science from February 18-23, 1994, at the annual meeting of the American Junior Academy of Science in San Francisco. Leading the Ohio delegation will be Mr. David M. Weaner, Assistant Director of the Ohio Junior Academy of Science. The students were selected at the 102nd Annual Meeting of The Ohio Academy of Science last April at Youngstown State University.

The Ohio Delegation to the American Junior Academy of Science Meeting: **Jonobie E. Baker** (Kent Roosevelt High School) Designing and Implementing a

4-D Graphics Language; **Amy A. Caudy** (Big Walnut High School) Effect of Sodium Hypochlorite on Poultry Microbes; **Rakhi K. Chaudhuri** (Maumee Valley Country Day School) Reduction of Gap Junctional Intercellular Communication by Tumor Promoters and Cell Transformation in Mouse Lung Epithelial Cells. [Work done with Dr. Randall Ruch, Department of Pathology, Medical College of Ohio]; **Smita De** (Cincinnati Country Day School) An Animal Model to Examine the Teratogenic Effects of Antiepileptic Drug Valproic Acid. [Work done with

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Senior Academy Council Appointed . . .

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The Ohio Senior Academy of Science Council

The purpose of the Senior Academy Council is to develop and promote scientific and scholarly activities in Ohio with regard to science, engineering, technology, and education.

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| Sr. Academy Director | Dr. Isadore Newman – 3 years The University of Akron Akron |
| Assistant Director | Ms. Christine Martin – 2 years Geon Vinyl Co. (The BFGoodrich Co.) Avon Lake |
| Secretary | Mr. William Hunt – 3 years Kent State University Strongsville |
| Annual Meeting Director | Dr. Fredika Robertson – 1 year The Ohio State University Columbus |

Division Coordinators

| | |
|---|---|
| Agriculture | vacant |
| Biological Sciences | Dr. Arthur L. Vorhies – 1 year Ohio University Chillicothe |
| Earth & Space Sciences | Mr. Scott Brockman – 2 years Ohio Geological Survey Columbus |
| Education | Mr. Wayne Shirbish – 3 years Woodsfield High School Woodsfield |
| Engineering & Technology | Mr. Manning Butterworth – 1 year I-NET, Inc. Dayton |
| Environmental Sciences & Resource Management | Mr. Frederick Kluth – 2 years National Machine Company Stow |
| General Interest | Mr. Richard Storck – 3 years Wooster High School Wooster |
| Information, Computing, and Communications | Dr. Paul Mullins – 1 year Youngstown State University Youngstown |
| Medical Sciences and Health Technologies | Dr. Judy Adams – 2 years Bowling Green State University Bowling Green |
| Physical Sciences & Mathematics | Dr. Fred Thomas – 3 years Sinclair Community College Dayton |
| Social & Behavioral Sciences | Dr. Alinde Moore – 1 year Ashland University |

Biology Research Could Help Protect Philippine Rain Forests

Two University of Cincinnati researchers are involved in a project that might point the way toward the best strategies for preserving tropical plants in the rain forests of the Philippines.

Graduate student Dan Busemeyer, a Purcell Marian alumnus, returned this summer from a bio-diversity expedition led by Robert Kennedy, a researcher at the Cincinnati Museum of Natural History.

"I was the plant analyst," said Busemeyer. "My part in the expedition for the museum was to take notes on habitat and to collect plant specimens for drying and for later placement in the museum."

In addition to the collecting work, Busemeyer was able to collect one particular plant species for his thesis research. "The species I chose was a wild bramble . . . a wild raspberry. I chose that particular plant because it was widespread throughout the Philippines, but at the same time, it's restricted in its distribution to above 1,000 meters elevation," he said.

There are many distinct populations of the wild raspberry spread across the many islands of the Philippines. What Busemeyer and his adviser, Assistant Professor Steven Rogstad, want to know is how genetically distinct are the different populations.

That will take some detailed detective work using a technique known as "DNA fingerprinting," which is a modification of the same technique used by prosecutors to convict rapists and murderers based on tiny traces of blood, hair, or other tissue left behind at a crime scene. "The techniques Dan is using have been developed in this laboratory," said Rogstad. "This will be one of the first applications." Rogstad has tested his fingerprinting technique on over 20 different plant species from horsetails to dandelions and turnips. The difference is that now the technique will be used to plot the genetic diversity within the Philippine plant species. "Right now, we know very little about the population genetic structure of any tropical plant," said Rogstad. "It's such an unstudied field."

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B-WISER: Buckeye Women in Science, Engineering, and Research Camp

By invitation of The Ohio Academy of Science, 107 young women from 73 schools in 40 of Ohio's 88 counties attended B-WISER—The Buckeye Women in Science, Engineering, and Research Camp. Hosted by the College of Wooster, the camp was designed to develop self-confidence, to nurture interests, and heighten career expectations and aspirations of young women (7th graders) in science, engineering, and research.

The camp director was Elizabeth Obara, a science teacher at Dublin High School who was assisted by Dr. Lois A. Cook, Emeritus Professor of Chemistry, Wright State University.

One camp highlight was a visit on Monday, 14 June 1993, by Dr. Helen Free, the 1993 President of the American Chemical Society. A Wooster alumna, Dr. Free is a medical researcher at Miles, Inc. in Indiana. Other exemplary women in science from industry, government, and higher education also shared their career experiences with the campers.

In addition to camper fees, funds for the camp are provided by grants. Wooster College recently learned it received a \$59,901 grant from the Ohio Board of Regents to continue the Institute. Funds were available under the Eisenhower Science and Mathematics Education Act. The grant was one of 43 awarded by the board from more than 100 proposals submitted for funding this fiscal year.

"The continuing confidence of the Ohio Board of Regents in supporting the B-WISER Institute partnership between The College of Wooster and The Ohio Academy of Science is especially encouraging in this highly competitive economic climate," said Lynn E. Elfner, CEO of The Ohio Academy of Science.

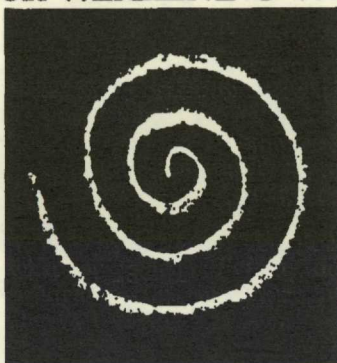
Reflecting on the institute's continuing success, Ted Williams, Wooster professor of chemistry and B-WISER coordinator, said, "Seldom do you have so many teachers concentrated in one program who are totally committed to excellence in the classroom. Every summer, these 20 science teachers come to Wooster and perform beyond the call of duty to heighten the interest these young women have in the natural sciences, mathematics, engineering, and computer science."

The camp is the first of three activities of the B-WISER Institute. The other two activities are a research internship, with a woman in science mentor or role model for each student, and a career workshop.

National Traveling Exhibit on Extinction Presented at Cincinnati Museum

The Cincinnati Museum of Natural History (CMNH) premiered the national traveling exhibit, *Our Weakening Web: The Story of Extinction* in Cincinnati on 22 April 1993. *Our Weakening Web* is a \$2.5 million, educational and entertainment based exhibit focusing on issues of extinction and environmental preservation. Through this exhibit, CMNH hopes to heighten public awareness of the ecological relationships that bind all life forms together. The exhibit runs through 18 September 1994.

OUR WEAKENING WEB



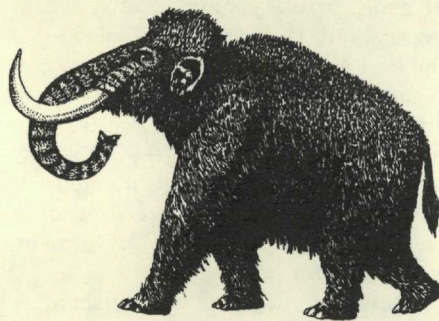
The Story of Extinction

Our Weakening Web is the first national traveling exhibit designed and produced by the CMNH. The exhibit will show how the manipulation of natural resources can effect the environment and will focus on environmental preservation's ultimate issue—extinction. In the display of *Our Weakening Web*, visitors can examine the natural process of extinction, observe the

effects of humankind upon the environment, and explore today's efforts towards future preservation. The exhibit uses total immersion settings that allow visitors to walk through scenes lost forever to extinction. Visitors can experience a deep chestnut forest surrounded by the sounds of flapping and calling passenger pigeons and witness the last gasp of the dinosaurs before extinction. Several sophisticated, life-like dioramas, interactive components, models, and specimens that encourage hands-on learning will be used.

The CMNH is part of the Museum Center at Cincinnati Union Terminal, a 500,000 square-foot renovated train station. Union Terminal is also home to the Cincinnati Historical Society Museum and Library, the Robert D. Lindner Family OMNIMAX® Theater and the Arts Consortium Gallery.

For more information about the exhibit contact the Cincinnati Museum of Natural History, Museum Center at Union Terminal, 1301 Western Ave., Cincinnati, OH 45203. Phone: (513) 287-7035, fax: (513) 287-7029.



AJAS Meeting...

Claire M. Schreiner and Dr. William J. Scott, Jr., Children's Hospital Medical Center, Department of Pediatrics, University of Cincinnati]; **Brian R. Dulin** (Zane Trace High School) Radiating Science; **Emily E. Ellis** (Benjamin Logan High School) The Factors Influencing Transformation Efficiency of *E. coli* mm294 by Means of the Plasmid pAMP; **Nicole S. Hammond** (Waterloo High School) Effects

of Dimethyl Sulfoxide on the Regeneration of Earthworms and Planaria; **William A. Hope** (Faith Christian High School) Comparison Study of Visible Stereo Versus Infrared Stereo Imagery; **Venkatesh Satish** (St. John's High School) Recycling Fluorescent Light Using Photovoltaics; **Alexander J. Seidensticker**

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Senior Academy Council Appointed . . .

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Ashland At-Large Members

| | |
|--------------------|--|
| Industry 1993-94 | Mr. John Berthold -1 year Babcock & Wilcox Alliance |
| Industry 1993-95 | Mr. Robert Nagy - 2 years Vernay Laboratories Yellow Springs |
| Government 1993-94 | Dr. Tara VanToai - 1 year U.S. Dept. of Agriculture Columbus |
| Government 1993-95 | Dr. Steve Channel - 2 years Armstrong Laboratory Wright Patterson Air Force Base |
| Academia 1993-94 | Dr. Kelly Kohls - 1 year Miami University Oxford |
| Academia 1993-95 | Ms. Lael Bradshaw - 2 years Sinclair Community College Dayton |

Philippine Rain Forest Bio Research . . .

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The results of Busemeyer's genetic analysis will show whether the different plant populations are highly inbred and distinct or whether there is wide mixing of genes across geographically distant populations. The answer could determine the best strategy for preserving tropical plant species. If all the populations share a high level of genetic diversity, it might only be necessary to preserve a few patches to maintain genetic diversity. If each population is highly inbred, it would be necessary to set aside many more areas for preservation.

However, Rogstad and Busemeyer both fear that any preservation effort will come too late to save many tropical species. "Many species may disappear before they can be surveyed adequately," noted Rogstad. "So many of the secrets of the evolution of these forests may go down the tubes before we have a chance to analyze it scientifically. The areas I've seen in the Philippines . . . every single one of these areas had been completely logged over, or the last vestiges of commercial timber were being logged," reported Busemeyer.

"Our group was searching very long and hard for areas that were the least disturbed. The best we could come up with was right at the edge of a current

logging project. So, the least disturbed area was just about to be disturbed."

The research is a collaborative effort between the Cincinnati Museum of Natural History, the National Museum of the Philippines, and the University of Cincinnati. Funding was provided by the National Science Foundation and the MacArthur Foundation.

AJAS Meeting . . .

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(Chillicothe High School) The Effects of Ionizing Radiation on *Lycopersicon esculentum*.

Also representing the Ohio Junior Academy of Science will be Ms. Margie Lhamon of Lima, OH. She was a delegate to Boston in 1993 and has been invited back by the President of the National Association of Academies of Science to give a special report to the NAAS Board of Directors on ways to make the American Junior Academy of Science meeting more effective.

In addition, the following students have been designated Melvin Scholars in honor of the late Jack M. Melvin and his wife, Ruth, Delaware, OH: Jonobie E.

Lessons Learned: Ohio Teachers' Summer Internships in Technology

By Lynn E. Elfner, The Ohio Academy
of Science and Nadine K. Hinton,
Westerville City Schools

In cooperation with Ohio's Edison Technology Centers, 29 Ohio teachers of math and science, recruited by The Ohio Academy of Science, have completed internships in industry and academia at 17 sites from 1989-1993 in a variety of technological settings including biotechnology, polymers, manufacturing, and information technologies. Cooperating employers included: Applied Medical Technology, Ben Venue Laboratories, The BFGoodrich Co., Cleveland Advanced Manufacturing Center, Edison Animal Biotechnology Center, Edison BioTechnology Center, Edison Industrial Systems Center, Ferro Corporation, GenCorp, The Goodyear Tire and Rubber Company, ISOLAB Inc., Monsanto Co., OARDC, Premix Co., Rubbermaid Co., Stolle R & D Corporation, and U.S. Biochemical Co.

The teachers derived many benefits from their internships including greater knowledge of the precision needed in measurements, a realization of the extensive use of instruments in industry, the need for protocols for workplace safety, the need to safeguard proprietary knowledge and business secrets, the use of workplace teams to achieve goals, a recognition of the need for more hands-on experiences in learning, the ability to work with a variety of people, the need to meet deadlines, knowledge of careers and the requisite skills, and the sophistication needed in data analysis for quality control and assurance. Most teachers increased their enthusiasm for teaching, and their experiences reinforced their desire to teach and to share their experiences with their students and colleagues.

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